MISSOURI BOTANICAL GARDEN BULLETIN

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Missouri Botanical Garden Bulletin

Vol. XLIV SEPTEMBER, 1956 No. 7

SEPTEMBER IS THE TIME TO BUILD YOUR LAWN

SEPTEMBER 1 to November 15 is the time to work on your blue-grass lawn. You can have a good lawn in St. Louis by following these suggestions:

1. Cut all crab-grass as short as possible.

2. Spread a good commercial fertilizer. About 60 pounds will be needed for a small city lawn (30 lbs. to 1000 sq. ft.). Water it in on the same day with a gentle spray.

3. If you have many dandelions, plantain, or other broad-leaved weeds use one of the selective weed killers containing 2-4-D, on the first warm day. Wait at least one day after fertilizing and at least three days after using the weed killer before planting new seed.

4. Sow the best-quality blue-grass seed (or a *good* lawn-grass mixture) and sprinkle lightly after sowing. The ground needs to be kept moist for at least three weeks. Sprinkle the area lightly every evening if there is no rain.

5. Remember blue-grass does its growing underground and when the nights are cool. Take good care of your lawn every fall and you'll have a good lawn.

6. Never fertilize after early March. Blue-grass wants to go dormant during hot weather when weed grasses are most active.

7. Do not *sprinkle* your lawn in summer unless you want weed grasses to come in. If the ground is dry give your lawn a good *soaking* once every ten days but do not sprinkle.

EASTERN WITCH HAZEL *(Hamamelis virginiana)*

EASTERN WITCH HAZEL

JULIAN A. STEYERMARK

'TWAS the night before Labor Day, 't was the night before Hallowe'en, 't was the night before Thanksgiving, 't was the night before Christmas—and at any of these particular occasions, if we chanced to be outdoors in certain parts of the southeastern Missouri Ozarks, especially along rich, shaded, north-facing wooded slopes along streams, either in granite or limestone country, we might welcome an unfamiliar yellow-flowered shrub whose fragrance filled the air. I am referring now to the Eastern Witch Hazel *(Hamamelis virginiana)*. It is well known to the folks of the eastern half of the United States, mostly east of the Mississippi River, as the last of their native shrubs of the year to bloom.

"When the frost is on the punkin, and the fodder's in the shock," when the autumn nights begin to take on that certain briskness, when the graceful sprays of the last purple- and white-rayed asters and yellow goldenrods enliven the forest slopes—days in October and November—that is the time our Eastern Witch Hazel takes on especial importance. Up until then it has seemed like any other shrub of the woodlands, its branches bedecked with numerous leaves. But as the tiny buff-brown buds begin to open—sometimes in late August, sometimes in September or October or November or even December—behold, suddenly a new yellow patch of color appears in the woods! The once-drooping flower buds now take on prominence as from each one four tiny yellow ribbon-like petals uncurl and eventually straighten out, each nearly two-thirds of an inch long. These are so delicate and frail-looking as to appear to have been cut out by a tiny hand with a small pair of scissors. And there are hundreds of these sprinkled all along the spreading, wand-like, pale gray branches so characteristic of the Eastern Witch Hazel. The mass effect is indeed refreshing to behold. Frequently, at blossom-time, all the leaves have dropped off, accentuating the yellow-studded bare branches. But this shrub knows no hard-and-fast rules to hold or not to hold the leaves while flowering, because, as often as not, the leaves remain attached to the branches during the flowering period.

The leaves are mostly oval or egg-shaped with wavy edges. During the spring and summer they are pale green, but turn a solid yellow when autumn colors begin to run rampant. But as the leaves disappear from the branches, the deceptively fragile-looking flowers hang on. Instead of falling after a few days or a week of blossoming, as is the habit of many other species of plants, these four-petaled blossoms continue—and how they do! They are so tough that they are not fazed by snow, sleet, or ice. I have seen these "toughies" resist November and December snow and ice storms, with the temperature near zero, yet they appear afterwards none the worse for it. I have seen these shrubs remain in flower during prolonged cold wintry spells when it would seem that no living

flower would stand a chance against the bitter weather. So there is something remarkable about the powers of resistance of the protoplasm, the living make-up of such a tiny flower.

It is difficult to state whether or not the protoplasm of the flower during such cold spells goes into a state of suspended dormancy or lifelessness. However, it is certain that the blossom is anything but dead, because at some time during flowering the tiny pollen from one of the four stamens is transferred to one of the two short styles of the minute pistil, usually of another flower, and the life processes of pollination and of fertilization take place —even on a cold November or December day. This process goes on, indeed very slowly, but during the following year what seems like a miracle happens: the tiny two-chambered ovary, with an even tinier ovule in each chamber, the whole no larger than a pin-head, gradually enlarges and finally turns into a capsule about half an inch long. This capsule eventually matures and splits open, ejecting with sudden force the two black, shining bony seeds within. Thus, nearly a year's time has elapsed from the opening of the first flower to the onset and ripening of the mature fruit the following autumn.

What a remarkable life process has taken place. Yet, like many another flower whose fragrance is "wasted on the desert air," the Eastern Witch Hazel is all but unknown to Missourians in its native haunts. To see it, one must travel into the Ozarks of southeastern Missouri—Reynolds, Iron, Madison, Shannon, and Carter counties. These five counties are the only ones in the state where it has been found wild. It favors rich, wooded hillsides usually facing north where it thrives in the relatively cooler and moister atmosphere of such locations. Places where it may be seen to advantage are: along the East Fork of the Black River at "Johnston's Shut-in" and along the ravine of Cook Spring branch in the Clark National Forest, both located in Reynolds County; along limestone wooded bluffs of the St. Francis River in Madison County; on Cardareva Mountain along Current River in Shannon County; along the "Royal Gorge" in Iron County; and along various creeks in the Clark National Forest in Carter County. But there are many other places, too, where it may be seen in these counties, if one likes to hike. Here in the Missouri Ozarks it reaches one of its known southwestern limits of geographical distribution.

The Vernal or Ozark Witch Hazel *(Hamamelis vernalis)*, on the other hand, is much more familiar to Missouri people who travel through the Ozark region. From January to April it flowers along Ozark streams, following water courses, and especially on gravel bars of such rivers as the Meramec, Niangua, Gasconade, Piney, St. Francis, Current, Eleven Points, Jacks Fork, Black, White, North Fork, and their tributaries, and along rocky draws of smaller branches. It is the first of the shrubs to flower in the Missouri Ozarks and is found throughout

the Ozark region south of the Missouri River ascending the Meramec River nearly as far as, but not quite to, the Missouri Botanical Garden's Arboretum at Gray Summit. Instead of the yellow flowers of the fall-flowering Eastern Witch Hazel, the Vernal species has flowers of an orange or even reddish hue, and even more fragrant than its eastern relative. Although both kinds are sometimes found in the same general locality in the Ozarks, the Vernal Witch Hazel usually hugs the margins of the streams, especially the gravel bars, while the Eastern Witch Hazel inhabits the cooler, lower and middle forested slopes usually above the stream banks. Besides being native in Missouri, the Vernal species is found in Arkansas, Oklahoma, and Louisiana.

THE LORE OF MINTS

WHEN the nymph Mintha, beloved by Pluto, was turned by jealous Proserpine into the plant Mentha, she became with her various faces both a delight and a source of confusion to mankind. Traveling with human migrations, mints were known in ancient times. They were introduced into England with the Roman conquest and into the United States with settlers. Peppermint escaped wild here before 1672. It was the first mint to be grown commercially by 1855, in Michigan. The American Indian used mint as a pot herb, a cure for fever and as perfume.

Mint was used in witches' brews, by doctors in drinks to clear the mind. Its odor stimulated the brain and it was made into orator's wreaths. The sacred perfume Kyphi burnt by Egyptians at sunset to Re contained mint. Pliny lists forty-one diseases curable by mint. The plant was strewn on the floors of Roman baths and theatres.

Peppermint from Asia was the Chaldeans' aid to digestion, and an early rat repellent. Spearmint was called "Our Lady's Mint," "Lamb Mint," or "Sage of Bethlehem." It was used as a meat relish in Roman feasts. Wine was scented with it; Bergamot mint endows chartreuse with bouquet even today. Horsemint was believed to be one of the bitter herbs of the Passover. If wounded soldiers ate it they would never recover. During Pompey's time it was thought that chewing it repelled the dread parasitic worm of elephantiasis. Field mint was used in Japan for centuries as a source of menthol for medicine. Pennyroyal's name "Pulegium" comes from the Latin "pulex" —flea, and "agere"—to drive. It was also a cure for coughs. Virgil said that deer when hurt sought it out to cure their wounds.

Old herbals said that one could tame a "wild" mint for one's garden by sowing the seeds with the sharp ends down! But anyone knows that the lady Mintha is untameable!

—MEREDITH CARSON

RARE MISSOURI PLANTS—IV

Whorled Pogonia or Purple Five-leaved Orchid

JULIAN A. STEYERMARK

At the time (1935) of publication of the "Annotated Catalogue of Flowering Plants of Missouri" by Mr. E. J. Palmer and myself, this orchid had not been recorded for the state. But a few years later in the Herbarium of the Chicago Natural History Museum (formerly Field Museum) I discovered a pressed specimen of this species collected on August 3, 1897, by Savage and Stull from Butler County, southeastern Missouri. This record was verified by the orchid authority, Dr. Donovan S. Correll.

Beginning in the spring of 1951 a new drama unfolded. Mr. Oscar Petersen, a life-long friend of the writer, and well-known in the St. Louis area as a poet-naturalist, an enthusiastic lover of flowers, and a charter member of the St. Louis Wild Flower Club, at age 85, was tramping around one of his beloved wild beauty spots of Nature, unmarred by man, and accidentally stumbled onto a large colony of the Whorled Pogonia orchid in one of the Ozark counties of southeastern Missouri. He wrote me an enthusiastic letter about this great discovery, and included a sketch of the orchid. Just a single young flower was seen in the entire colony, and, like a good conservationist, he had left it there. We could not be sure, therefore, what kind of Whorled Pogonia it was. For there are two kinds, the Smaller Whorled Pogonia or Green Five-leaved Orchid *(Isotria medeoloides)* with the flowers stalkless or nearly so and the sepals pale green, and the Whorled Pogonia or Purple Five-leaved Orchid with the flowers on a stalk an inch or more long and with brownish-purple sepals. The discovery made by Mr. Petersen was all the more remarkable because it was found in a general area that had been visited many times by botanists. This particular spot, however, apparently had never been searched until Mr. Petersen came across it.

The following June I visited the place with 86-year old Petersen, known to members of the St. Louis Wild Flower Club as "The Vagabond Dreamer," as chief and only guide. There were three colonies of the orchid with a grand total of nearly 150 plants. One colony of about fifty plants occurred in a rather level bottom along a small creek in a ravine hemmed in by La Motte sandstone bluffs and shaded by alder *(Alnus serrulata)*, sassafras, Flowering Dogwood, Red Maple, sapling Black Oak, Sour Gum, Hop Hornbeam, and native azalea. Other plants growing around the colony were early Sweet Blueberry *(Vaccinium vacillans)*, Sawbrier *(Smilax glauca)*, Hispid Goldenrod *(Solidago hispida)*, St. Andrew's Cross *(Ascyrum hypericoides)*, Yellow False Foxglove *(Gerardia flava* var. *macrantha)*, and Pigeon Grape *(Vitis cinerea)*.

The other colonies, containing approximately 100 plants, were found about 90 feet away and 15 feet higher

up than the first colony on the north-facing slopes of the same ravine, but in slightly drier soil covered with a dark green moss *(Dicranum scoparium)* and dominated by azalea, early Sweet Blueberry, and Sour Gum. The dominant trees in this ravine were Southern Yellow Pine, White Oak, and Shagbark Hickory, and the soil was decidedly acid.

At this time of year (June 7) the plants were at the stage of early fruiting and the young fruits were standing erect on definite stalks nearly an inch or more long. The identity of the orchid was now clarified: it was the Purple Five-leaved Orchid that has the flowers or fruits on definite long stalks. Also, the fact that the plants occurred in colonies, rather than as isolated individual plants, confirmed the identification as being this orchid and not the Smaller Whorled Pogonia. The latter was found in 1897 in Bollinger County by Mr. Colton Russell and has never since been seen, so far as records indicate.

Mr. Petersen has made annual pilgrimages to this spot since 1951 and reports tales of erratic behavior on the part of this orchid. One year he could not find any plants, another year only a few stunted individuals, and another year many plants but all lacking flowers (sterile). Now, as he approaches age 90, he hopes to have the thrill of seeing the actual flowers some day in May.

A colony of Purple Five-leaved Orchid *(Isotria verticillata)* photographed at the only Missouri station known.

TWO COURSES IN BULB FORCING

Two courses in bulb forcing will be given at the Garden this fall, with Dr. Frederick G. Meyer as instructor. The new cool-storage greenhouses worked out very well last year, and those who took the course had excellent bulbs to take home. This year there will be an advanced course on new and rare bulbs which are seldom available in St. Louis.

As materials for the courses are purchased immediately after the closing registration date, no registration fees can be refunded after the last day of registration. Please send registration fees to:

Horticultural Courses,
Missouri Botanical Garden,
2315 Tower Grove Ave.,
St. Louis 10, Mo.

Course I—Bulb Forcing

Six sections (no prerequisites). Limited to 180 persons, 30 persons each section.

Registration: September 1–October 8.

Place: Experimental Greenhouse, Missouri Botanical Garden. Enter Cleveland Ave. gate, 2221 Tower Grove Ave.

When:

Week-day afternoon sections—1:30–4:00 P. M.

Monday, October 8
Wednesday, October 10
Friday, October 12
Wednesday, October 17

Saturday morning sections—9:30 A. M.–12:00 Noon, October 6 and October 27.

Content of Course:

Lecture on technique of bulb forcing

Hints on outdoor bulb culture

Five 7-inch bulb pans for each student

Tulips, narcissus, paperwhites, hyacinths

Each student receives at least 24 top quality bulbs

Planted bulbs will be given cold treatment in the Garden bulb pit and

cold greenhouse until ready to flower (approximately 60–80 days). Students will be notified by postcard when to pick up the bulbs.

Registration Fee—$5.00 (covers all materials)

Course II—Advanced Bulb Forcing

This course will feature new European introductions. All of them make charming and distinctive living-room ornaments. Registration is limited to 20 persons and is restricted to those who have taken the elementary bulb course in previous years.

Registration: September 15–October 13.

Place: Experimental Greenhouse, Missouri Botanical Garden. Enter Cleveland Avenue gate, 2221 Tower Grove Ave.

When: Saturday, October 13, 9:30 A. M.–12:00 Noon.

Content of Course:

To learn about forcing rare bulbs

Bulbs directly imported from Holland to be used

Ten pots of bulbs

Lachenalias, Sparaxis, Ixias, Tulip "Duc Van Tholl," Narcissus "Grand Soleil d'Or." (Two pots each kind).

Planted bulbs will be given cold treatment in the Garden cold greenhouse and bulb pit. Students will be notified by postcard when to pick up bulb pans.

Registration Fee—$10.00 (covers all materials)

THE LORE OF BASIL

There is something sinister about the lore of Basil. Pliny said the more the plant was abused the better it prospered and that it should be sown with curses. Since scorpions were seen to lie under its leaves it was thought that the plant bred them. Once, a man who smelled it was said to have had "a scorpion bred in the brain." There is a famous story from Boccaccio about a lady who placed the severed head of her murdered husband in a flower pot, planted Basil over it and watered it with her tears. The Basil thrived.

"Basil," some say, came from the Greek word "basilikon" meaning kingly, because it was fit for a king. Or it was derived from "basilisk," a fabulous creature which killed with a look.

In Greece the plant meant "hatred," possibly because of an old custom of representing poverty in paintings as an evil and ragged old woman seated beside a pot of Basil. In Italy, however, the plant if put in the shoes of one's enemy was supposed to turn his hatred to love. In Crete it meant "love washed with tears." In England, where it was used for warts and for indigestion, its seed was pounded fine and eaten "to procure a merrie hearte."

—Meredith Carson

RARE MISSOURI PLANTS—V

Umbrella Plant (Eriogonum longifolium)

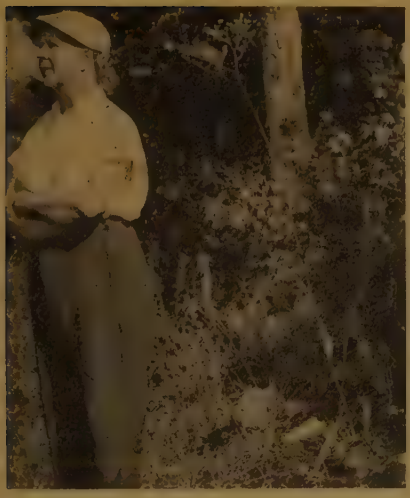
JULIAN A. STEYERMARK

The only evidence for the occurrence of *Eriogonum longifolium* in Missouri was from an herbarium specimen which the writer encountered in the Drury College collection at Springfield, Missouri. This specimen was collected by Mr. J. W. Blankinship around 1890 from "Oregon County." Mr. Blankinship had made other remarkable finds in his years of collecting, especially in the region around Springfield. This Oregon County record remained as a challenge and no one since 1890 seemed to have been able to locate any other plants pertaining to this species.

Now Oregon County borders Arkansas, and the writer on several occasions tried to visit likely-looking spots where the Umbrella Plant might occur. As the species had been found from a number of places in Arkansas—dry cedar glades, rocky dry bluffs of the White River, and similar habitats—such types of areas were mapped out for exploration by the writer for Oregon County. But without any definite locality being indicated on the original label, trying to find the spot where *Eriogonum longifolium* existed in a county consisting of thousands of square miles was like searching for the proverbial "needle in a haystack." As the plant flowered during the hot summer months, it did not help matters any when repeated climbs and hikes over rocky "barrens" and "glades" under a broiling hot July or August sun failed to reveal any sign of an Umbrella Plant.

Then, in the spring of 1938, quite by accident, while I was engaged in making a survey in Ozark and Taney counties along rocky limestone bluffs of the White River to be flooded by the now-completed Bull Shoals Dam, I found the basal rosettes of leaves belonging to a plant which I did not recognize. The leaves were long and narrow, dull olive-green on the upper side and on the lower side covered with a dense, velvety, gray-white hairiness. In 1949 while I was occupied with another survey of the White River country, in order to rescue plant records from impending dam construction, I encountered additional basal leaf rosettes, like those which I had found eleven years earlier. I dug up a plant and transplanted it to the Ozark "glade" section of my wild flower garden in northern Illinois. Although the plant came through each winter, it did not flower. So the mystery of the basal rosette continued.

Finally, in 1953 I matched the basal rosettes of my herbarium specimens with—you guessed it—the basal leaves of the Umbrella Plant *(Eriogonum longifolium)*, and found that they agreed in every particular. The long-lost Umbrella Plant had been found. Now, all that remained was to return to the scene of the collection I had made in April and May of 1938 along the White River, and try to find the plant in flower.



Note the tall flowering stem of Umbrella Plant. Compare with height of lady (Mrs. Steyermark).

As the dates of flowering and fruiting recorded on herbarium sheets indicated the months of July through October, I planned my return visit for the Labor Day week-end of 1955. Accompanied by Mrs. Steyermark I revisited the Ozark County locality first. We set out with cameras and a field press. It had been seventeen years since I had been to this place. I did not know what to expect after such a long interval of time, because man's activities had destroyed so many other natural areas through burning, overgrazing, logging, and real estate or industrial development. Climbing over the rocky slopes above the Bull Shoals Lake, which now has flooded a considerable part of the area, it was discouraging to see so much overgrazed woodland and "glade" robbed of their natural cover. Then we climbed over a fence on the other side of which no grazing had been allowed, and the vegetation took on a natural appearance and became more abundant.

Now we entered a small limestone "glade" or opening above the rocky bluffs, dotted here and there with red cedar, chinquapin oak, and small shrubs. "Here it is," I shouted with enthusiasm, and soon, more and more plants were spotted. And what a pleasant surprise! The plants were flowering and the stems bearing the flowers were 5½ feet tall! An examination of the yellow-green flowers showed that each one had six calyx segments and nine stamens. Several little flowers were grouped together in bunches arising from a tiny cup (involucre), covered on the outside with grayish-white hairiness. The outside of the flowers themselves, as well as the flower-branches, had this gray-hairy covering. A few specimens were collected for distribution to the major herbaria of the United States, color notes recorded, and both kodachrome and black-and-white photographs made to perpetuate this noteworthy occasion.

As we trekked happily back to the car, another search had ended after a couple of decades, and the mystery of the basal leaf rosette had been solved. And another lost Missouri plant had been re-discovered!

Central portion of the main display of Bald Cypresses in Tower Grove Park. They are scattered through the east circle which is on the central east-west drive through the park, about a block and a half west of its Grand Avenue entrance. While beautiful at all times of year they are usually at their best during the month of October. There is also a fine planting of them in Francis Park. Through much younger, the trees have been well fed and have grown very rapidly.

BALD CYPRESSES FOR ST. LOUIS

EDGAR ANDERSON

THIS fall the Garden will again set out a considerable number of specimen trees of the Bald Cypress, *Taxodium distichum*. For over a year we have spent most of our efforts with the Garden's trees in getting rid of weed trees. These are such species as Tree-of-Heaven and Silver Maple which came up, mostly self-sown, during the years when St. Louis had a terrific smoke problem and such trees were not weeded out because they helped to fill up the gaps. Now that they have been taken out, there is room for something better and we are laying plans to put in some showy groups of Bald Cypress this fall, principally in the central part of the Garden near the big lily pools. It is certainly one of the finest trees for St. Louis; many of us think that for park and estate planting it is the best of all. Unfortunately, it is not always available in nurseries in the numbers and sizes one needs. This year it is in good supply and we plan to add considerably to our collection.

Not that the Garden does not already have many excellent specimens —every superintendent and Director we have had, since the days of Mr. Shaw's James Gurney a century ago, has set them out. Since they do well here and usually live to be very old we now have many handsome specimens. The most conspicuous are the towering pair set out to the rear of Mr. Henry Shaw's old country home TOWER GROVE. Others are set here and there throughout the grounds, and there is a fine collection at the Garden's Arboretum at Gray Summit, Missouri.

The Arboretum Cypresses are of more than passing interest. A former member of the Garden staff, Dr. Hermann Von Schrenk, took a special interest in the Bald Cypress and studied them throughout their range from southern Mexico to the coast of New Jersey. The collection at Gray Summit grew out of his efforts and has groups of trees from seeds collected in various parts of the natural range of the cypress including its westernmost limit near Kerrville, Texas. This Texas strain is of considerable botanical and horticultural impact. The trees are shorter and sturdier. Their bark is so much more resinous than the ordinary Bald Cypress that when they were young seedlings, just set out, they did not need a wire guard to protect them from rodent damage, as did the other strains.

The Garden's long interest in Bald Cypresses is directly responsible for a good many of the fine trees around St. Louis in addition to those in the Garden itself. At the turn of the century several of the families in the Compton Heights neighborhood (near Grand and Russell) had close connections with the Garden, and the numerous fine specimens of Bald Cypress in that part of town are lingering evidence of this interest in fine trees a half century ago.

The finest display of all, however, was started in the east circle of the central drive through Tower Grove

Park by Mr. Shaw's first superintendent, James Gurney. It has been cared for and added to by three generations of Gurney's, and is now certainly one of the handsomest plantings of Bald Cypresses anywhere in the world. It is charming in late spring when the trees leaf out in a ferny feathery brilliant light green. It is dramatic in a winter snow when the flagpole-straight trunks of the larger trees are more conspicuous than in summer. It is at its very best, however, in October when the cypresses turn from dark green to a green with a touch of gold and then, day after day, week after week, slowly turn from a brown yellow-green to a rich golden-brown. In years when we do not have a hard freeze too early, the nearby Ginkgoes turn a clear imperial yellow. The finest moment of all is those clear frosty mornings when the Ginkgo leaves first start to fall in the crisp quiet air, making round circles of a slightly tawny yellow under each Ginkgo while all the Cypresses are feathery spires of rich brown.

It is this unusual contrast of the delicate with the gigantic which gives the Bald Cypress its peculiar effect in the landscape. Its main outlines are bold. It matures slowly but lives to be an old tree, eventually dominated by the main trunk. Side branches are small and mostly delicate; the leaves are positively fern-like. Each leaf is a tiny, plain tongue of green an inch or so long; up to fifty of these leaves are arranged side by side on tiny twigs, most of which fall with the leaves, so that of all the conifers, none looks quite so much like a tall telephone pole hung with clustered ferns.

The Bald Cypress is indeed the most distinctive of our native American trees, and even to one who knows nothing of its botanical history it suggests something which really belongs to another world, as indeed it does. With its close relatives, the Sequoias of California, the Cryptomerias of Japan, and the Dawn Redwoods (Metasequoias) of China, it has persisted from times when trees of this sort were much more common in the world than they are today. The Cryptomerias, Redwoods, and Big-Trees are likewise gigantic towering trees with delicate, fern-like foliage. They too make dramatic avenues for parks and big estates in these parts of the world where they are winter-hardy enough to grow readily.

It is really surprising that of all these trees the Bald Cypress should do so well in a city park, because, unlike them, it is native only to swamps and overflow lands. The closely related Mexican Cypress grows in river-beds, not on river-banks, but down in the actual rocky bed of the stream itself. Our Bald Cypress grows in such places too, particularly in Texas, but it is more commonly found in bayous where there is water over its roots a good deal of the year. Under such conditions it does well, though its form usually becomes more rugged and picturesque than when it is grown as a lawn tree. Under these swamp conditions there are few other trees which can compete with it, and throughout the Gulf South, long winding lines of

Bald Cypress along the horizon mark the presence of the nearest bayous. In Mississippi and Louisiana one may drive for days along roads in the low country and never be out of sight of them. They extend from Texas to around the coast to New Jersey, running far up the coastal plains along the larger river systems. Below Cape Girardeau they are common in Missouri, though the vast stands which once characterized our "swampeastern" part of the state were greatly reduced when the land was cut-over and drained. Like many other southern species, they spread farther north along the Wabash than along the Mississippi itself. They are common in lower reaches of the Ohio, and from the mouth of the Wabash are found northwards to about the latitude of St. Louis.

As a specimen tree for the lawn, or set out in a park or large formal garden they do not need any more water than any other large tree. They do not like to be crowded and they prefer fertile soil, for they are strong feeders but north of their natural range they actually are better off in well-drained sites.

Chinese Flower Arrangement. By H. L. Li. 122 pp., 20 plates, 10 figs. Hedera House, Philadelphia. $4.00.

ABOUT the time the Pilgrims landed on the wild New England coast, a Chinese gentleman was writing a book on flower arrangement which is still a classic. He included references to Chang Ts'u, who wrote five centuries earlier on the twenty-six conditions most suitable for enjoying the blossoms of Japanese Apricots and made his own list of conditions for enjoying flowers in general. These included "wind among pines," "kettle sings deep in the night," and "an intimate friend arrives when flowers are in full bloom." Living in Peking (whose mid-continental dust storms eclipse those of our own dust bowl in frequency if not in intensity), he gave minute directions as to how flowers should be sprayed to keep them in good condition. To him flower arrangement was so much a matter of atmosphere that he even listed the kinds of people who should be intrusted with rinsing off various kinds of flowers! Chrysanthemums, he thought, should be cared for by one "who prefers everything that is old and extraordinary," crabapples by a charming guest, and peonies by a fashionable young lady. Two hundred years later, in the nineteenth century, another Chinese elegant was publishing a note-book which included a section on flower arrangement and bore the apt title, "Six chapters from a floating life." A modern Chinese scholar, Dr. Li, of the staff of the Morris Arboretum, includes all these and various other classics in his beautiful and sensitive book on Chinese flower arrangement. There are twenty full-page reproductions of Chinese prints and silk paintings of the 17th and 18th centuries, illustrating flower arrangements, as well as ten text-figures and a colored frontispiece. Dr. Li has supplied

a discussion of the ways flowers are used in Chinese homes, with notes about the actual flowers used and the symbolism which plays so large a part in their enjoyment. A translation of Chang Ch'ien-te's 1595 treatise on vase flowers is given in an appendix, along with an enumeration of common Chinese flowers and the Chinese dynasties with their dates. There are chapters on dwarf trees and other house plants and their use in Chinese homes, and the book has a good index.

All of this and more you will find in Dr. Li's book. Chinese flower arrangement has a literature extending over 900 years. In a little more than a hundred pages, Dr. Li manages to transmit to the American reader something of the atmosphere out of which this art arose, to induce even amidst American bustle a mingled sense of childlike wonder, studied casualness, and whimsical scholarship. It is a window into another kind of life and another attitude toward the plants around us. Lilyturfs (Liriope) growing in porcelain containers alongside weathered rocks of curious shape are presented to Chinese scholars, not only because they make an effective house plant but because the long narrow flat leaves are thought to be particularly appropriate as book-marks for ancient books. Pine, bamboo, and Japanese apricot are so traditionally mingled in winter bouquets that they have come to be commonly referred to as "Three friends of the cold season." Magnolia, crabapple, and peony flowers are given to one's friends because, in addition to making an effective arrangement in a basket, their names, strung together in Chinese, make a complicated pun. "Magnolia-crabapple-peony" said in Chinese, can also be taken to mean: "Wealth and honor in the halls of jade." —E. A.

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SOME FACTS ABOUT SHAW'S GARDEN

The Missouri Botanical Garden (the official name chosen by Mr. Shaw) carries on the garden established by Henry Shaw over a century ago at TOWER GROVE, his country home. It is a private institution and has no support from city or state. The old stone walls and cast-iron fences, the Linnaean House, the Museum, the Mausoleum, and the TOWER GROVE mansion all date from Mr. Shaw's time. Since his death, as directed in his will, the Garden has been in the hands of a Board of Trustees who appoint the Director.

The Garden is open every day in the year (except New Year's and Christmas) from nine A. M. until seven P. M. (spring to fall) and until six (in the winter time) though the greenhouses close at five. TOWER GROVE, itself, Mr. Shaw's old country home, is open from one until four, admission twenty-five cents, with special guides. The Garden is nearly a mile long and has several entrances. The Main Entrance, the one most used by the general public, is at Tower Grove and Flora Place on the Sarah bus line (No. 42). The Park Southhampton buses (No. 80), direct from downtown, pass within three blocks of this entrance and stop directly across the street from the Administration Building at 2315 Tower Grove Avenue. The latter is the best entrance for students, visiting scientists, etc. It is open to such visitors after 8:30 A. M., but is closed on Saturdays, Sundays, and holidays. The step-in gate (more or less concealed by the big Cleveland Ave. gate, 2221 Tower Grove) is nearly always open, and there is a service entrance on Alfred Avenue, one block south of Shaw Avenue.

Since Mr. Shaw's time an Arboretum has been developed at Gray Summit, Mo., adjacent to State Highways 50 and 66. It is open every day in the year and has two miles of auto roads as well as foot trails through the wild-flower reservation. There is a pinetum and an extensive display of daffodils and other narcissi from March to early May.